

CLAIMS

1. An electronic device, comprising:
a rotary switch for scrolling through a plurality of scrollable parameters; and
a bump stop for triggering the ability to increment and decrement the plurality of
5 scrollable parameters.

2. An electronic device, comprising:
- an input for enabling and disabling a plurality of scrollable parameters;
- a rotary switch for scrolling through the scrollable parameters; and
- 5 a bump stop for inhibiting rotation of the rotary switch and triggering a ratcheting function for the rotary switch.

3. The electronic device of claim 2, wherein the rotary switch increments and decrements the scrollable parameters with first and second rotations until the bump
- 10 stop is hit in a first direction, in response to the bump stop being hit in the first direction the ratcheting function is enabled in the second direction and incrementing of the scrollable parameters is enabled in the first direction, and in response to the bump stop being hit in the second direction the ratcheting function is enabled in the first direction and decrementing of the scrollable parameters occurs in the second
- 15 direction.

4. An electronic device, including:

a bump stop; and

a rotary switch having a ratcheting feature enabled by the bump stop, the rotary switch capable of rotating in first and second directions, rotation of the rotary switch

5 in the first direction (hitting the bump stop) enables a ratcheting feature in the second direction and increments an electronic device parameter in the first direction; rotation of the rotary switch in the first direction (without hitting the bump stop) enables the electronic device parameter to be decremented in the second direction.

5. A rotary switch for an electronic device, comprising:

a first scrollable parameter controlled by the rotary switch in which rotation in a first direction increments the first scrollable parameter and rotation in a second direction decrements the first scrollable parameter;

5 an input coupled to the electronic device for disabling the first scrollable parameter and enabling a second scrollable parameter, in response to the second scrollable parameter being enabled rotation of the rotary switch in the first direction increments the second parameter and rotation of the rotary switch in a second direction decrements the second parameter; and

10 a bump stop coupled to the electronic device, the rotary switch hitting the bump stop in the first direction triggering a ratcheting function such that rotation of the switch in the second direction has no effect on the second scrollable parameter and rotation of the switch in the first direction increments the second scrollable parameter, and the rotary switch hitting the bump stop in the second direction triggering the
15 ratcheting function such that rotation of the switch in the first direction has no effect on the second scrollable parameter and rotation of the switch in the second direction decrements the second scrollable parameter.

6. The rotary switch for the electronic device as described in claim 5, wherein

20 the first direction is a clockwise direction and the second direction is counterclockwise direction.

7. The rotary switch for the electronic device as described in claim 5, wherein the first direction is counterclockwise direction and the second direction is a clockwise direction.

8. A rotary switch for an electronic device includes a bump stop for inhibiting rotation of the rotary switch, the bump stop triggering a ratcheting feature that inhibits scrolling through an electronic device parameter in one rotation direction and enables
5 scrolling through the electronic device parameter in the opposite rotation direction.

9. The rotary switch of claim 8, wherein scrolling through an electronic device parameter comprises incrementing an electronic device parameter.

10 10. The rotary switch of claim 8, wherein scrolling through the electronic device parameter comprises decrementing the electronic device parameter.

11. An electronic device, including:

a bump stop; and

a rotary switch having a ratcheting feature enabled by the bump stop, the rotating switch capable of rotating in a first direction and a second direction; and

5 the rotary switch hitting the bump stop in the first direction enables ratcheting in a second direction and incrementing an electronic device parameter in the first direction; and

the rotary switch hitting the bump stop in the second direction enables ratcheting in the first direction and decrementing the electronic device parameter in

10 the second direction.

12. The electronic device of claim 11, wherein the electronic device is a radio communication device and the electronic device parameter is a PL code.

15 13. The electronic device of claim 11, the electronic device is a radio communication device and the electronic device parameter is a DPL code.

14. The electronic device of claim 11, wherein the electronic device is a radio communication device and the electronic device parameter is a zone.

15. A method of expanding the range of a rotary switch having a predetermined number of positions in an electronic device, comprising the steps of:

enabling a parameter of the electronic device, the parameter having a
5 predetermined range to be controlled by the rotary switch;

determining a coarse step size based on the predetermined range of the parameter and the range of the rotary switch, each position of the rotary switch equating to one coarse step size;

turning the rotary switch in a first direction to increment the parameter in
10 coarse steps towards a desired parameter value;

overshooting the desired parameter value by N positions;

turning the rotary switch in a second direction to narrow the step size and decrement the parameter with the narrowed step size, the narrowed step size being based on current parameter value, previous parameter value and number of usable
15 switch positions;

overshooting the desired parameter value by N positions; and

continue rotating and narrowing the step size in both directions until the desired parameter value achieved.

16. The method of claim 15, wherein $N=1$.

20 17. The method of claim 15, wherein $N \geq 1$.

18. The method of claim 15, wherein the range of the rotary switch is capable of being reset via a user input.

19. The method of claim 15, wherein the first direction is clockwise and the second direction is counterclockwise.

20. The method of claim 15, wherein the first direction is counterclockwise
5 and the second direction is clockwise.

21. A method of expanding the range of a rotary switch for an electronic device, comprising the steps of:

- determining the range of the rotary switch;
- enabling an electronic device parameter to be controlled by the rotary switch;
- 5 determining a range for the enabled electronic device parameter;
- distributing the range of the electronic device parameter across the range of the rotary switch to provide a coarse step size;
- incrementing the electronic device parameter by the coarse step size by turning the rotary switch clockwise towards a desired parameter value;
- 10 overshooting the desired parameter value by one position;
- turning the rotary switch counterclockwise to update the coarse step size and decrement the electronic device parameter, the coarse step size being updated by $(\text{current parameter value} - \text{previous parameter value}) / \text{number of usable switch positions}$;
- 15 overshooting the desired parameter value by one position;
- turning the rotary switch clockwise to update the coarse step size and increment the parameter; and
- continue turning and overshooting with clockwise and counterclockwise rotations until the desired parameter value is achieved.

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22. The method of claim 21, wherein the number of usable switch positions is determined by the distance from the current switch position to a bump stop of the rotary switch in the desired direction of rotation.

23. A method of expanding the range of a rotary switch in an electronic device, comprising the steps of:

enabling a parameter of the electronic device, the parameter having a predetermined range to be controlled by the rotary switch;

5 determining a coarse step size based on the predetermined range of the parameter and the range of the rotary switch, each position of the rotary switch equating to one coarse step size;

turning the rotary switch in a first direction to adjust the parameter in coarse steps towards a desired parameter value;

10 undershooting the desired parameter value by N positions;

turning the rotary switch in a second direction to alter the step size and adjust the parameter with the altered step size, the altered size being based on current parameter value, previous parameter value and number of usable switch positions;

undershooting the desired parameter value by N positions; and

15 continue rotating in both directions to alter the coarse step size until the desired parameter value achieved.

24. A method of expanding the range of a rotary switch for an electronic device, comprising the steps of:

- selecting a non-default parameter to be controlled by the rotary switch;
- 5 modifying a step size of the rotary switch based on the range of the selected parameter; and
- narrowing the range for the selected parameter with each change in rotation direction based on current, previous and useable switch positions.

- 10 25. The method of claim 24, wherein the step of narrowing the range comprises the step of narrowing the range for the selected parameter with each change in rotation direction based on current, previous and useable switch positions until the step size reaches one or less.